

U.S. Patent Application Serial No. 10/758,333  
 Reply to Office Action dated November 09, 2004

**Amendments to the Specification:**

Please amend paragraph [0071] as follows:

[0071] For the conventional motor vehicles, the target road-wheel steering angle  $\delta$  is expressed as a product between the road-wheel steering angle gain  $K_c$  and driver-designated steering angle  $\theta$ , i.e.  $\delta = K_c \cdot \theta$ . For the motor vehicle 24 subjected to the travel direction control by the inventive control device 10, the target road-wheel steering angle  $\delta$  is expressed as a product between a difference between the driver-designated target steering angle  $\theta$  and angle of travel direction  $\psi$  and the road-wheel steering angle gain  $K_a$ , i.e.  $K_a(\theta - \psi)$ . For both the conventional motor vehicles and the motor vehicle 24 controlled by the inventive control device 10, the yaw rate  $\gamma$  is expressed by

$$\gamma = \frac{V}{[L]([L] + A \cdot V^2)} \cdot \delta$$

$$[L] = \frac{V}{[L]} \cdot \delta$$

The angle of travel direction  $\psi$  is derived by integrating the yaw rate over time, i.e.  $\psi = \int \gamma dt$ .

Forward component of the vehicle velocity  $V$  is expressed as a product between the cosine of the

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angle of travel direction  $\psi$  and the vehicle velocity  $V$ , i.e.  $\frac{dx}{dt} = V \cdot \cos\psi$ , while a lateral component of the vehicle velocity  $V$  is expressed as a product between the sine of the angle of travel direction  $\psi$  and the vehicle velocity  $V$ , i.e.  $\frac{dy}{dt} = V \cdot \sin\psi$ . The forward vehicle position is determined by integrating the forward vehicle velocity, i.e.  $x = V \cdot \int \cos\psi dt$ , while the lateral vehicle position is determined by integrating the lateral vehicle velocity, i.e.  $y = V \cdot \int \sin\psi dt$ . .

Further, for both the conventional motor vehicles and the motor vehicle 24 controlled by the inventive control device 10, the driver-designated steering angle  $\theta$  is determined by subtracting, from a target lateral course position  $yOL$ , a product among the lateral vehicle position, front gazing point  $L$  and angle of travel direction  $\psi$  and then multiplying the subtraction result by the driver F/B gain, i.e.  $\theta = hc(yOL - y - L\psi)$  or  $\theta = ha(yOL - y - L\psi)$ .